Nova Scotia Gold

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Introduction

In recent years, Nova Scotia has experienced a renewed interest in gold exploration. This has initiated an increase in the demand for information on gold in the Province.

Some of the renewed interest in Nova Scotia gold has been stimulated by geological exploration funded by several federal-provincial cost-shared agreements. In the present agreement, the Canada - Nova Scotia Mineral Development Agreement, three major projects are underway to explore for gold along the South Shore and the Eastern Shore.

This pamphlet provides a general guide to the 'wheres' and 'hows' of gold mining in the Province.

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History - Past and Present

By the time - "Klondike" became a household word in 1897, Nova Scotia had already experienced two significant gold rushes. In 1860, gold found in the Mooseland district initiated the first gold rush. The gold rush of 1896 proved the most lucrative. The availability of dynamite for blasting, cyanide in the concentration process and improved machinery made it feasible to mill lower grades and improve productivity. In 1898, Nova Scotia achieved its peak production when 31,113 ounces (882054 g) of gold were milled.

Gold remains as alluring as it has throughout history. It is in demand as a universal monetary standard, and in jewellery and ornamental pieces. As technology advances, new uses for gold are evolving. For instance, gold is being used on the space shuttle as the thermal conductor on the heat shields titles.

Nova Scotia has a great deal of gold potential. With a little work, you can become a prospector. But do you know how to recognize gold? Where to find it? How to collect it? Read on!

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How Do I Know It's Gold?

Before setting out in quest of gold, you must know how to recognize it in the field. A typical find is more likely to be a few small flakes rather than the large veins or nuggets described in old prospecting stories.

Gold is a mineral that is generally buttery yellow in colour and has a metallic lustre. The deeper the shade of yellow, the fewer impurities the sample contains.

Gold is often found in association with pyrite or "fool's gold." Gold resembles pyrite but can be distinguished from it in a number of ways. Gold is malleable and will flatten out when hammered. Pyrite is frequently found in cubic crystals, some of which can be quite large, whereas gold is more often disseminated or scattered as small flecks.

Gold is very heavy - it has a high specific gravity (19.3). This makes gold a suitable mineral for panning, a method of gravity separation.

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Where Do I Look for Gold in Nova Scotia?

In Nova Scotia, gold is found in many different locations and in a number of rock types. The accompanying map shows the locations of old gold mines throughout the Province. The majority of old mines are located in the southern half of the Province and are predominantly associated with a group of rocks known to geologists as the Meguma Group. The Meguma Group is composed of slate, a fine grained, greenish grey rock that breaks into layers, and quartzite, a more coarse grained, blue-grey rock. These rocks were originally laid down at the bottom of an ocean as mud and sand. Heat and pressure (metamorphism) changed them to slate and quartzite.

Gold is frequently occurs a vein or lode deposits in quartz veins in the Meguma Group rocks. The colour and texture of the quartz veins varies from white crystalline to a blue-grey greasy

appearance. The blue-grey veins seem to be the most productive.

Gold is also accumulates as placer deposits in beach or river sediment as the result of the erosion of gold-bearing rocks. These deposits were among the first to be mined in the early gold rush days, as they were accessible and easy to work. At the Ovens, shore placer deposits have accumulated as the result of wave action (see #17 on map).

Gold may also be found in very old placer deposits known as paleoplacers. The once unconsolidated sediments are now solid rock.

Other areas that have good gold potential are the piles of waste rock or tailings associated with old mines. Gold is often found when reworking these areas.

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Ask permission to Enter Land

Keep in mind that if your prospecting will take you onto privately owned land, you should obtain the permission of the land owner. (See Mineral Rights, Landowners, and Mineral Exploration, by Nova Scotia Department of Mines and Energy, February 1986.)

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How Do I Extract the Gold?

Gold panning is the most inexpensive, accessible extraction methods for "weekend prospectors". Your field gear should include a grizzly (sieve), pan, shovel, hand lens, tweezers, squeeze bottle and vial. Pans may be of aluminum, steel, or plastic construction to suit individual preferences. A good location to look is on the downstream side of boulders, where suspended gold may drop out of the slow moving water and accumulate as placer deposits. Panning rivers in the gold districts can be productive.

After the grizzly is positioned over the pan and a shovel full of unsorted material placed in it, it is shaken to separate out the larger material. These gravels and cobbles can later be visually inspected for gold. The remainder of the material in the pan is then suspended in water and the lighter portion removed with a circular swishing motion. Some pans have "riffles" or ridges that catch the heavy gold particles while allowing lighter materials to be washed out.

After numerous repetitions of this action, a residue of gold and other heavy minerals remain in the bottom of the pan. This material can be collected with a squeeze bottle and stored in a vial for further separation later using mercury. Though the basic method of gold panning varies little, in time one develops their own unique style.

Three common commercial methods of extracting gold from crushed ore are gravity separation, amalgamation and cyanidization.

Gravity separation is the physical separation of gold from its impurities based on weight differences. Water is added to the crushed ore in a gold pan, rocker, sluice box or jig. The slurry is manipulated in a manner (i.e. swirled or shaken) which causes the heavier gold to collect on the bottom surface of the apparatus.

In the amalgamation process, mercury is added to be crushed ore and this absorbs the free gold. The gold-mercury mixture (amalgam) is first placed in a leather bag which is squeezed to remove excess mercury. The amalgam is then heated in a closed system to evaporate the remaining mercury.

In the process of cyanidization, crushed ore is dissolved in a mixture of lime and cyanide. After unwanted solids are removed by filtering, zinc dust is added to liquid to cause gold to precipitate. Cyanidization is the most common gold recovery technique in Canada. It is also the basis of the modern heap leaching process. Leaching solutions are poured over piles of crushed ore and then collected and refined to extract the dissolved gold.

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Conclusion

Now you know the essentials of prospecting for gold in Nova Scotia. They may be your golden opportunity. You may discover that prospecting can be an enjoyable and profitable hobby!.

Portions of this brochure have been adapted from *Gold in Nova Scotia* by Jennifer L. E. Bates.

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Photo: (Not presently available)
Miners loading an ore car with gold ore on the 225 foot (69 m) level of the Dominion Mine, Waverley Gold District, in the mid-1930s.

Figures: (Not presently available)
Construction and mode of operation of a rocker (after J. D. Galloway).

A. ***Box, 48" x 18" (122 x 46 x 46 cm).***
B. ***Tray with iron bottom containing ½" (1.3 cm) holes.***
C. ***Apron of burlap mounted in frame.***
D. ***Rockers.***
E. ***Handle for rocking.***
F. ***Riffles, for catching gold.***
G. ***½ (1.3 cm) holes in iron bottom of tray.***
H. ***Cleats holding frame in place.***

Course of material is through rocker: Dirt and water are put into B and apparatus is rocked by handle. Water and sand and gold pass through holes into apron C where most heavy minerals including gold is caught, then over riffles by which more gold is caught, thence to waste. Material remaining in B is thrown out and apron is removed and washed.

Examples of prospecting equipment.

1. ***grizzly (sieve);***
2. ***medium-size pan;***
3. ***mortar and pestle;***
4. ***grubhoe;***
5. ***long-handled prospecting pick;***
6. ***ordinary prospecting pick;***
7. ***rock chisel;***
8. ***single-jack;***
9. ***moil;***
10. ***goggles for protecting for eyes when sampling.***

Map: (Not presently available)
Gold Districts in Nova Scotia

1.Cranberry Head
2.Chegoggin
3.Carleton
4.Kemptville
5.West Caledonia
6.Westfield
7.Whiteburn
8.Molega (Malaga)
9.Fifteen Mile Brook
10.Brookfield
11.Pleasant River Barrens
12.Mill Village
13.Voglers Cove
14.Leipsigate
15.Stanburne
16.Blockhouse
17.Ovens
18.Gold River
19.Ardoise
20.Mount Uniacke
21.South Uniacke
22.McKay Settlement
23.Central Rawdon
24.West Gore
25.East Rawdon
35.Gays River
36.Upper Stewiacke
37.Caribou
38.Moose River
39.Gold Lake (Scraggy Lake)
40.Lake Charlotte
41.Clam Harbour
42.Ship Harbour
43.Tangier
44.Mooseland
45.Beaver Dam
46.Little Liscomb Lake
47.Fifteen Mile Stream
48.Lochaber
49.Killag
50.Sheet Harbour
51.Salmon River
52.Quoddy
53.Harrigan Cove
54.Moosehead (Shiers Point)
55.Caledonia
56.Ecum Secum
57.Miller Lake
58.Wine Harbour
59.Goldenville (Sherbrooke)

26.Renfrew
27.Elmsdale
28.Oldham
29.Waverley
30.Montague
31.Cow Bay
32.Lawrencetown
33.Chezzetcook
34.Lake Catcha

60.Cochrane Hill
61.Forest Hill
62.Country Harbour
63.Isaacs Harbour
64.Upper Seal Harbour
65.Lower Seal Harbour
66.Stirling
67.Wagmatcook (Middle River)

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